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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HAMILTON, MONPLAISIR G

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 07/30/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/779,866

Applicant(s)

PRICER, JAMES E.

Examiner

Monplaisir G Hamilton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Claims 1-27 remain for examination.

Response to Arguments

2. Applicant's arguments filed 6/02/03 have been fully considered but they are not persuasive.

Applicants argue "Examiner's cited references fails to teach or suggest to person having ordinary skill in the art to perform an analysis of the groups of transactions to find associations in the order of the transactions in the groups ... Anderson discloses generally the steps of grouping data into clusters and analyzing transactions in terms of those clusters to determine relationships between consumers and products (Anderson, Column 2, lines 63-66; column 3, lines 11-15)... Anderson would not, however, have taught or suggested to a person of ordinary skill at the time this application was filed to apply these techniques to perform an analysis of transactions to find associations in the order of the transactions in the groups as claimed in claims 1, 14, 20 and 24".

Examiner however disagrees with applicant's assertion that Anderson does not teach an analysis of transactions to find associations in the order of the transactions in the groups. As noted by applicant Anderson discloses grouping the transactions into groups (col 3, lines 35-40), and then analyzing the groups to determine buying behaviors, patterns, habits. Anderson further discloses consumer behavior reports show consumer buying across time intervals, stores sites, product clusters, departments and within consumer clusters (col 14, lines 54-60). Examiner has determined that the claimed associations in the order of the transactions are equivalent to the

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disclosed purchasing behavior (col 4, lines 1-5). Examiner has interpreted purchasing behavior to mean a reliable set of purchases/transactions that are made by a consumer over a period of time. Anderson inherently determines an association exists in the order of the transactions during the computation of the purchasing behavior of a consumer. Examiner therefore holds Anderson's teachings and suggestions render the claimed invention unpatentable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1-6, 14-22, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5878419 issued to Carter, herein referred to as Carter further in view of US 5974396 issued to Anderson et al.

Referring to Claims 1 and 20:

Carter discloses a method for use in analyzing associations in the order of transactions, the method comprising loading data from the transactions into a database system (col 3, lines 55-68; col 4, lines), where the data includes an entry for each transaction and the transactions are grouped into groups (col 6, lines 40-45; col 8, lines 20-25; col 9, lines 40-50);

Carter does not explicitly disclose the claimed “ordering the transactions within each group; and performing an analysis of the groups of transactions to find associations in the order of the transactions in the groups”.

Anderson discloses ordering the transactions within each group and performing an analysis of the groups of transactions to find associations in the order of the transactions in the groups (col 6, lines 34-45; col, 35-40).

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At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Carter such that the transaction groups are analyzed to determine associations. One of ordinary skill in the art would have been motivated to do this because it would provide a system that can determine consumer-buying habits (col 6, lines 45-48).

Referring to Claim 24:

Carter discloses database system for use in analyzing associations in the order of transactions, the database system comprising a massively parallel processing system (col 6, lines 1-6) comprising one or more nodes; a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs (col 5, lines 30-50); a plurality of virtual processes each of the one or more CPUs providing access to one or more virtual processes; each virtual process configured to manage data stored in one of a plurality of data storage facilities (col 5, lines 60-68; col 6, lines 1-10); a parsing engine configured to parse transaction data and store the parsed transaction data in a table that is distributed across two or more data-storage facilities (col 3, lines 55-68, col 4, lines 1-5), where the data includes an entry for each transaction and the transactions are grouped into groups (col 4, lines 5-15; col 6, lines 40-45; col 8, lines 20-25; col 9, lines 40-50);

Carter does not explicitly disclose the claimed “database-management component configured to operate on the table to order the transactions within each group; and perform an analysis of the groups of transactions to find associations in the order of the transactions in the groups.”

Anderson discloses database-management component configured to operate on the table to order the transactions within each group; and perform an analysis of the groups of transactions to find associations in the order of the transactions in the groups (col 6, lines 34-45).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Carter such that the transaction groups are analyzed to determine associations. One of ordinary skill in the art would have been motivated to do this because it would provide a system that can determine consumer-buying habits (col 6, lines 45-48).

Referring to Claim 14:

Carter discloses a method for use in analyzing associations in the order of transactions, the method comprising loading data from the transactions into a database system (col 3, lines 55-68; col 4, lines), where the data includes an entry for each transaction and wherein loading the data comprises grouping the transactions into groups (col 6, lines 40-45; col 8, lines 20-25; col 9, lines 40-50);

Carter does not explicitly disclose “selecting sessions of transactions belonging to the same group and corresponding to a single session; ordering the transactions within each session; and performing an analysis of the sessions of transactions to find associations in the order of the transactions in the sessions.”

Anderson discloses selecting sessions of transactions belonging to the same group and corresponding to a single session (col 21, lines 55-65); ordering the transactions within each

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session; and performing an analysis of the sessions of transactions to find associations in the order of the transactions in the sessions (col 22, lines 15-25).

Referring to Claim 2:

Carter and Anderson disclose the limitations as discussed in Claim 1 above. Anderson further discloses the data for each transaction includes a time stamp related to a time that the transaction occurred and wherein ordering the transactions comprises numbering the transactions based on the time stamps included in the data for the transactions (col 21, lines col 21, lines 45-46).

Referring to Claim 3:

Carter and Anderson disclose the limitations as discussed in Claim 2 above. Anderson further discloses the transactions comprises numbering the transactions in order from the transaction having the earliest time stamp to the transaction having the latest time stamp (col 21, lines col 21, lines 45-46, col 22, lines 15-20).

Referring to Claim 4:

Carter and Anderson disclose the limitations as discussed in Claim 1 above. Carter further discloses loading the data from the transactions into the database system comprises parsing the data for each transaction into fields in the database system; and identifying one of the fields as a group identifier field where a group identifier for each transaction is stored (col 8, lines 5-25; col 2, lines 5-20).

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Referring to Claim 5:

Carter and Anderson disclose the limitations as discussed in Claim 4 above. Carter further discloses loading the data from the transactions into the database system further comprises identifying one of the fields as an item identifier field where an item identifier for each transaction is stored (col 9, lines 50-55).

Referring to Claim 6:

Carter and Anderson disclose the limitations as discussed in Claim 1 above. Carter further discloses wherein performing the analysis comprises performing an affinity analysis (col 6, lines 35-50).

Referring to Claim 15:

Carter and Anderson disclose the limitations as discussed in Claim 14 above. Anderson further discloses each entry includes a time stamp related to a time that the transaction occurred and selecting comprises selecting entries with time stamps lying in a predetermined range (col 21, lines 45-47).

Referring to Claim 16:

Carter and Anderson disclose the limitations as discussed in Claim 15 above. Anderson further discloses ordering comprises numbering the selected entries based on their respective time stamps (col 21, lines 45-46).

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Referring to Claim 17:

Carter and Anderson disclose the limitations as discussed in Claim 16 above. Anderson further discloses numbering comprises numbering the selected entries from the earliest to the latest (col 22, lines 15-20).

Referring to Claim 18:

Carter and Anderson disclose the limitations as discussed in Claim 16 above. Anderson further discloses numbering comprises numbering the selected entries from the latest to the earliest (col 22, lines 15-20).

Referring to Claim 19:

Carter and Anderson disclose the limitations as discussed in Claim 16 above. Anderson further discloses numbering comprises numbering the selected entries based on their respective distance in time from a reference time (col 21, lines 55-60; col 22, lines 15-20).

Referring to Claim 21:

Carter and Anderson disclose the limitations as discussed in Claim 20above. Anderson further discloses executable instructions that cause a computer to select sessions of transactions belonging to the same group and corresponding to a single session (col 21, lines 55-60).

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Referring to Claim 22:

Carter and Anderson disclose the limitations as discussed in Claim 20 above. Anderson further discloses a time stamp related to a time that the transaction occurred and where, in selecting sessions, the computer selects entries with time stamps lying in a predetermined range (col 21, lines 44-46).

Referring to Claim 25:

Carter and Anderson disclose the limitations as discussed in Claim 24 above. Anderson further discloses the database-management component is configured to select sessions of transactions belonging to the same group and corresponding to a single session (col 21, lines 55-60).

Referring to Claim 26:

Carter and Anderson disclose the limitations as discussed in Claim 25 above. Anderson further discloses each entry includes a time stamp related to a time that the transaction occurred and where, in selecting sessions, the database management system is configured to select entries with time stamps lying in a predetermined range (col 21, lines 45-50).

4. Claim 7-13, 23 and 27 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5878419 issued to Carter, herein referred to as Carter and US 5974396 issued to Anderson et al as applied to Claims 1 and 20 above, and further in view of US 5241648 issued to Cheng et al, herein referred to as Cheng and US 6061682 issued to Aggarwal, herein referred to as Aggarwal.

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Referring to Claims 7, 23 and 27:

Carter and Anderson disclose the limitations as discussed in Claims 1, 20, and 24. Carter further disclose a method wherein loading data from the transactions into the database system comprises parsing the transaction data into fields in a base table in the database system (col 3, lines 55-68; col 4, lines); identifying one of the fields as a group identifier field where a group identifier for each transaction is stored (col 8, lines 22-25; col 9, lines 44-58); identifying one of the fields as an item identifier field where an item identifier for each transaction is stored (col 9, lines 44-58);

Carter and Anderson do not explicitly disclose the claimed “ordering the transactions in each group of transactions comprises concatenating an order number to the item identifier for each transaction and performing the analysis comprises building one or more support tables for one or more item identifiers with concatenated order number; and calculating support, confidence and lift by joining the support tables.”

Cheng discloses ordering the transactions in each group of transactions comprises concatenating an order number to the item identifier for each transaction (Abstract, lines 5-14; col 5, lines 1-10).

Aggrawal discloses performing the analysis comprises building one or more support tables for one or more item identifiers with concatenated order number; and calculating support, confidence and lift by joining the support tables (col 9, lines 34-55; col 10, lines 50-55).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Carter to include an indexing and support/confidence/lift calculation method. One of ordinary skill in the art would have been

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motivated to do this because it would allow a user to determine associations between transactional items (col 3, lines 25-30).

Referring to Claim 8:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 7 above. Aggrawal further discloses building the one or more support tables comprises counting the transactions containing various combinations of item identifiers with concatenated order number and dividing the count by a total number of groups to obtain a support for each of the combinations (col 8, lines 15-23).

Referring to Claim 9:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 7 above. Aggrawal further discloses building the one or more support tables comprises for each item identifier with concatenated order number, counting the transactions containing the same item identifier with concatenated order number and computing the support by dividing the count by a total number of groups and storing the item identifier with concatenated order number and the support in a first support table (col 8, lines 15-23).

Referring to Claim 10:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 9 above. Aggrawal further discloses building the one or more support tables further comprises building a second base table by selecting transactions from the first base table that include an

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item identifier corresponding to an item identifier and concatenated order number having a support more than a predetermined value (col 8, lines 55-65; col 9, lines 30-60, col 9, lines 54-58).

Referring to Claim 11:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 10 above. Aggrawal further discloses building the one or more support tables further comprises counting the transactions in the second base table containing various combinations of item identifiers with concatenated order number and dividing the count by a total number of groups in the second base table to obtain a support for each of the combinations (col 8, lines 15-23).

Referring to Claim 12:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 10 above. Aggrawal further discloses building the one or more support tables further comprises counting the transactions in the second base table containing combinations of two specified item identifiers with concatenated order number and dividing the count by a total number of transactions in the second base table to obtain a support for each of the combinations; and storing the item identifiers and computed support in a two item support table combinations (col 8, lines 15-23).

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Referring to Claim 13:

Carter, Anderson, Cheng and Aggrawal disclose the limitations as disclosed in Claim 10 above. Aggrawal further discloses building the one or more support tables further comprises counting the transactions in the second base table containing combinations of N specified item identifiers with concatenated order number and dividing the count by a total number of transactions in the second base table to obtain a support for each of the combinations; and storing the item identifiers and computed support in an N item support table combinations (col 8, lines 15-23).

Final Rejection

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monplaisir G Hamilton whose telephone number is 1703-305-5116. The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y Vu can be reached on 1703-305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are 1703-746-7239 for regular communications and 1703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 1703-305-3900.

Monplaisir Hamilton
July 14, 2003


P. **SHAHID AL ALAM**
PATENT EXAMINER